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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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HARRITY & SNYDER, LLP
11240 WAPLES MILL ROAD
SUITE 300
FAIRFAX, VA 22030

EXAMINER

ELMORE, STEPHEN C

ART UNIT

PAPER NUMBER

2186

DATE MAILED: 09/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/608,140

Applicant(s)

GHEMAWAT ET AL.

Examiner

Stephen Elmore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119


- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
- Paper No(s)/Mail Date 2/3/2004.

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.


STEPHEN C. ELMORE
PRIMARY EXAMINER

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DETAILED ACTION

1. This Office action responds to the application filed June 30, 2003.
2. Claims 1-39 are presented for examination.

Priority

3. Acknowledgment is made of applicant's claim for priority under 35 USC 119(e) based on the following provisional applications:

- 1) 60/447,277 filed February 14, 2003;
- 2) 60/459,648 filed April 3, 2003.

It is noted that because the inventive entity of the instant application is different from the inventive entity of either of these two applications, the claim for priority is not approved.

Consequently, this application's effective priority date remains June 30, 2003.

Information Disclosure Statement

4. The information disclosure statement filed February 3, 2004 contains an entry for a publication document which has been "lined-through" to indicate that the entry has not been considered.

Publications suitable for consideration must be identified by their author(s), publication source, page numbers, publication date, etc.

The listing "InterMezzo, <http://www.inter-mezzo.org>, 2003" was not considered because:

first, this is not an actual document, instead, the entry identifies a web site which does not qualify as a printed publication,

second, even if it was a document the required information for considering a publication: author(s), publication source, page numbers, publication date, etc. was not completely provided,

and so, the listed entry has been lined-through.

Drawings

5. The drawings are objected to because:

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a. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following features must be shown or the feature(s) canceled from the claim(s).

1. "record" and "master";

Note: While it is acknowledged that the terminology "record" and "master" appear in the drawings, however, the drawings do not show the reader what constitutes the elements "record" or "master" in such a way as to communicate to the reader what kind or scope of element exactly is the claimed "record" or "master";

To summarize, the claims specify the features - record and master -, but the drawings do not "show" what Applicant considers to constitute in the invention a "record" or a "master", for example, a simple box labeled "master" does not show the scope of a master, and the mere inclusion of the label "record" in the drawings does not show the scope of what is a record, therefore, notwithstanding what is already shown in the drawings, the features "record" and "master" are not adequately depicted in the drawings;

b. Figure 1 -- the term "network" is identified by two different reference characters "100" and "140" but the same element cannot have two different reference characters;

c. Figure 3 -- the scope of "Master 130" is unclear as to how many or which of the sub-elements in the figure constitute the element Master.

No new matter should be entered.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled

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"Replacement Sheet" in the page header (as per 37 CFR § 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The disclosure is objected to because of the following informalities:

a. paragraph [0001] claims priority to two US Provisional applications, however, as noted above because Applicant is not entitled to the requested priority date the claim for priority needs to be removed;

b. the term "master" is used at many locations throughout the Specification without a description or definition having been given of what this term represents, however, "master" is not a term in the art, and because an express definition has not been provided (either in the specification or the claims) as to what hardware components form this element, the disclosure is indefinite as to its scope of coverage;

c. the term "record" is used at many locations throughout the Specification without a description or definition having been given of what this term represents, however, although "record" is a term in the art in file systems representing data having a certain format, it is also a term in the art in database systems representing data having a different format, where the scope of meaning in these two diverse areas are different, and further, although the term record does appear in technical dictionaries, the disclosure is silent as to whether Applicant intended a technical dictionary meaning to apply, so because an express definition has not been provided (either in the specification or the claims), and because the scope of the element "record" has not been illustrated in the drawings, and in view of a contradictory meaning assigned as noted in the following paragraph (f), it is unclear as to what scope of meaning, kind of data, or data format, the use of this term represents, so that the disclosure is indefinite as to its use of the term record or the activity of appending a record;

d. paragraph [0045] uses the term "prefix-compression" but does not provide an explanation of what activity this term represents;

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e. paragraph [0046] mentions:

1. a "chunk type" and
2. a "64-bit value"

but doesn't explain what the "chunk type" or "64-bit value" represents in relation to the invention;

f. paragraph [00137] is objected to because it is impermissible to equate the terms "file", "chunk", "replica", and "record" as all referring to data, i.e., equivalent to "any type or form of data stored by the file system", this characterization is erroneous and contradictory because these terms are not synonymous, these terms each have different meanings having differing scopes;

g. page 36, line 2, "exits" is a typo of "exists".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1-39 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

a. Claims 12, 17, 27 and 28 incorporate the term "master", however, there is inadequate written description in the disclosure so as to inform the reader (as already noted above in the paragraph 6(b) objection to the Specification) exactly what is the scope of meaning covered by the use of this term to such a degree that an Artisan would not know with any degree of certainty what technical component(s) Applicant was trying to claim by use of this term, such that, an Artisan could not make and/or use the claimed invention incorporating the claimed "master" due to an inadequately written description;

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b. Claims 1-3, 5-11, 13-19, 21-26, 29-39 incorporate the term "record" in relation to the activity "append" or "appending", however, there is inadequate written description in the disclosure so as to inform the reader (as already noted above in the paragraph 6(c) objection to the Specification) exactly what is the scope of meaning covered by the use of the term "record", to such a degree that an Artisan would not know with any degree of certainty what data component/format is covered by this term, especially since at paragraph [00137] Applicant equates "record" with "any type or form of data stored by the file system", but also noting that this usage is repugnant to the usual meaning of the term, because "record" already has a technical meaning as defined in technical dictionaries, and it is a known characteristic of patent claim construction that while Applicant may be his own lexicographer, he is not permitted to use a word in a way that is repugnant to its customary meaning, consequently, the written description and usage of "record" in the present disclosure is muddled because it is unknown exactly what kind of thing is being "appended" in the practice of the instant invention, such that, an Artisan could not make and/or use the claimed invention incorporating the claimed "record" due to the inadequately written description.

Dependent claims not already mentioned inherit the deficiency of the independent claim.

9. Claims 1-15, 17-31, 32 and 33 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for,

Claims 1, 2, 6, 7, 9, 17, 18, 23, 32 and 33,

the feature, expressed in varying ways as,

1) "appending a record into a chunk,"

does not reasonably provide enablement for,

the claimed feature, also expressed in varying ways as,

2) "appending a record to a chunk."

The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and or use the invention commensurate in scope with these claims.

The difference between these two contrasted features goes to what is meant by the scope of the activity "appending...into" as compared to "appending...to";

In the first instance (1), the language "appending...into a chunk" means that a record is added to the chunk in the sense that a chunk is equivalent to a data container of a fixed size (such as 64 Mb as taught in the Spec) where the record is added to, i.e., at the end of, the existing data already contained in the chunk, (where a chunk is a container holding a varying amount of data, from zero up to an upper limit of data, i.e., until the chunk is full), while it is also true and correct to say that the record is added into the chunk, this interpretation is further reinforced and supported by the additional language in the remainder of the claims which states, see e.g., claim 1, line 5, "determining whether the record fits into the chunk",

while in the second instance (2), the language "appending...to a chunk" means that the record is added at the end of the chunk, i.e., "appended to", but this language introduces into the scope of the claim a contradiction because appending to (at the end of) a chunk exceeds the chunk size, which size is not supposed to be exceeded according to the whole of the teachings of the disclosure, and is also contradicted by the additional language in the remainder of the claims which states, see e.g., claim 1, line 5, "determining whether the record fits into the chunk", suggesting the record goes into the chunk, not appended to the end of the chunk.

Consequently, the use of the word "in" in these claims -- when the claims should really be using "into" -- creates a contradiction in the meaning of the claims.

This is not a trivial distinction but is significant as to defining what it is that the Applicant intends the scope of the activity "appending" to signify. In each of these claims, at many locations the claims use the preposition "to" when they should be using the preposition "into" to maintain consistency with the concepts and teachings of the disclosure. Thus, a 112, first paragraph, scope of enablement rejection is appropriate.

Dependent claims not already mentioned inherit the deficiency of the preceding claim in the claim dependency chain.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 14, 15, 29, 30 and 33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are indefinite because:

a. The term "closest" in claims 14, 15, 29 and 30 is a relative term which renders the claim indefinite. The term "closest" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree of being close, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Without more details being given as to how or in what way "closest" is meant to be interpreted with respect to the elements of the claim, the claim scope cannot be determined;

b. The term "independent" in claim 33 is a abstract term which renders the claim indefinite. The term "independent" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite way of being independent, and does not provide a standard for ascertaining the requisite state of being independent, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Additionally, the claimed elements that the independent claim language relates to, on the contrary, appear to have an inherently dependent relationship between the record append request and the record instead of an independent relationship, so the use of this term, without more, suggests an inherently contradictory concept.

Without more details as to how or in what way "independent" is meant to be interpreted with respect to the elements of the claim, the claim scope cannot be determined.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claim 16 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Howard et al., "Scale and Performance in a Distributed File System," pp 51-81, ACM, February 1988, ("Howard").

Howard teaches the claimed system for performing a record append operation (Claim 16) as a data replication system carried out in a distributed file system, Andrew File System, see "1. Introduction", and see "6.1 Volumes", in which the activity of balancing of available disk space and utilization on servers is accomplished by redistributing volumes (chunks) among the available partitions on one or more servers, where this balancing activity teaches all the claimed limitations, because a volume resides within a single disk partition on a server (primary server) and may grow in size, as records (files), are appended (added) to the volume which accounts for the growth in size of the volume, where a frozen copy-on-write snapshot of the volume called a Clone is regenerated at a remote (secondary server) site, where when the volume changes because records have been appended to the volume, then the volume at the remote site (secondary server site) may be updated by shipping only those files (records) that have changed, see "6.2 Volume Movement", where the claimed record append request is inherently taught since the secondary servers store the newly appended file(s) (record) and because requests are explicitly taught as being directed to the new site.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

McClain, US Patent 5,794,254, teaches a computer file backup environment where data "blocks" are gathered in "chunk" files, and when a chunk reaches a predetermined size, it is transmitted to a remote site for updating the backup version of a respective file.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Elmore whose telephone number is (571) 272-4436. The examiner can normally be reached on Mon-Fri from 9:30-6:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on (571) 272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

September 17, 2005


STEPHEN C. ELMORE
PRIMARY EXAMINER